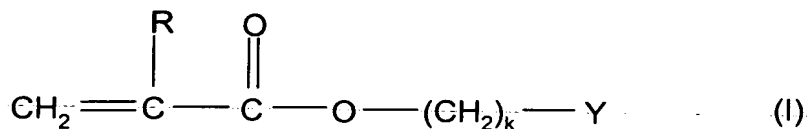


We claim:

1. A radiation-curable coating composition comprising
 - 5 a) at least one aliphatic urethane (meth)acrylate which has two ethylenically unsaturated double bonds per molecule and contains at least one polytetrahydrofurandiol having a number average molecular weight M_n of at least 500 g/mol in built-in form and
 - 10 b) at least one monoethylenically unsaturated reactive diluent containing at least one aliphatic heterocycle as structural element.
2. A coating composition as claimed in claim 1 which further comprises a bifunctional or polyfunctional ester of an α,β -ethylenically unsaturated carboxylic acid with a diol or polyol (= component c)).
- 15 3. A coating composition as claimed in either of the preceding claims comprising from 20 to 90% by weight of the component a), from 10 to 80% by weight of the component b), from 0 to 50% by weight of the component c) and up to 50% by weight, based on the total weight of the components a), b) and c), of customary auxiliaries, with the proviso that the percentages by weight of the components a), b) and c) add up to 100% by weight.
- 20 4. A coating composition as claimed in any of the preceding claims which, based on the total weight of the components a), b) and c), further comprises:
 - 25 d) from 0 to 10% by weight of at least one photoinitiator,
 - e) from 0 to 5% by weight of at least one UV absorber,
 - 30 f) from 0 to 5% by weight of at least one free-radical scavenger and
 - g) from 0 to 10% by weight of additives customary for coating compositions.
5. A coating composition as claimed in any of the preceding claims, wherein the component b) is a compound of the formula I



where

R is selected from among H and CH_3 ,

k is from 0 to 4, and

Y is a 5- or 6-membered, saturated heterocycle containing one or two oxygen atoms, with the heterocycle being able to be unsubstituted or substituted by C₁-C₄-alkyl.

- 5
6. A coating composition as claimed in claim 5, wherein the component b) is selected from among trimethylolpropane monoformal acrylate, glycerol monoformal acrylate, 4-tetrahydropyranyl acrylate, 2-tetrahydropyranyl methylacrylate and tetrahydrofurfuryl acrylate.
- 10
7. A coating composition as claimed in any of the preceding claims, wherein the component c) is selected from among diacrylates and dimethacrylates of aliphatic diols.
- 15
8. The use of a radiation-curable coating composition as defined in any of claims 1 to 7 for coating substrates.
9. The use as claimed in claim 8, wherein a substrate having a surface comprising wood, plastic, paper, leather or metal is used.
- 20
10. A process for producing a coated substrate, which comprises
- applying a coated composition as claimed in any of claims 1 to 7 to the surface of the substrate,
 - if appropriate drying the applied coating composition at elevated temperatures, and
 - curing the coating composition, which may previously have been dried, by irradiation with UV radiation or an electron beam.
- 25
- 30
11. A coated substrate obtainable by a process as claimed in claim 10.